



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

[Handwritten signature]

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,773	09/22/2000	Hans-Christian Haugli	99813-US	7775

23553 7590 12/22/2003

MARKS & CLERK
P.O. BOX 957
STATION B
OTTAWA, ON K1P 5S7
CANADA

EXAMINER

MAIS, MARK A

ART UNIT	PAPER NUMBER
----------	--------------

2664

DATE MAILED: 12/22/2003

[Handwritten mark]

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/646,773

Applicant(s)

HAUGLI ET AL.

Examiner

Mark A Mais

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on April 13, 2001 was filed after the filing date of the Application on October 27, 2000. The submission is in compliance with the provisions of 37 CFR 1.56 and 1.97. Accordingly, the examiner considered the information disclosure statement.

Drawing Objections

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the decimation filter must be shown or the feature canceled from the claims 7, 16 and 20. No new matter should be entered.
4. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Art Unit: 2664

Claim Objections

5. Claims 1-8, 10-17, and 19 are objected to because of the following informalities: they use the words “characterized” instead of “wherein”. Claim 19 refers to claim 15, but Examiner has interpreted the claim to refer to claim 17. Also, claim 20 refers to claim 16, but Examiner has interpreted the claim to refer to claim 19. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-6, 8, 10-14, 17-19, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Panech et al. (USP 5,657,358).

Art Unit: 2664

8. With regard to claims 1 and 4, Panech et al. discloses a packet communication system having a control station and a plurality of remote terminals that communicate on demand with said control station over a wireless link, said control station comprising a data port for receiving data packets destined for said terminals (**Fig. 2, digital input from Telco trunk lines 14 are input to a digital switch matrix 25; see also col. 1, lines 32-34, col. 8, lines 53-56; col. 9, lines 15-17**); means for generating a plurality of carriers forming data channels for carrying said data packets (**Fig. 2, plurality of codecs 16 process the digital information received from PBX 15 via switch matrix 25**); means for assigning said data packets destined for a particular terminal to one or more of said data channels (**Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; see also col. 9, lines 54-55**); means for generating a carrier forming a control channel carrying control information pertaining to said data channels (**Fig. 2, remote-connection processor (RPU) 20 conveys control and data messages to the CCU 18; see also col. 10, lines 18-20**); and means for simultaneously transmitting said carriers carrying said data packets and said control channel to said remote terminals as an r.f. signal (**col. 9, lines 13-14, at least one of the time division time slots is required for the radio control channel, and, after being passed through the modem 21, is sent to the RF/IF processing unit (RFU) 21, where the IF signal from the modem is converted to an RF signal**); and each of the terminals comprising a receiver for receiving said r.f. signal (**Fig. 3, antenna 32b, RX RFU 31b, and RX modem 30b**) characterized in that each said terminal comprises an analog-to-digital converter for digitizing said received signal (**Fig. 25, A/D 139; see also col. 64, lines 41-47**); a buffer for storing said digitized received signal (**Fig. 25, FIFO 140**); and a processing means for continually monitoring

Art Unit: 2664

the contents of said buffer to extract control information from said control channel (**Fig. 3, CCU 29**), and said processing means processing said stored signal to extract said data packet destined for said terminal from one or more of said data channels in response to control information received on said control channel identifying said packet data as destined for said terminal (**Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46**).

9. With regard to claims 10 and 13, Panech et al. discloses a method of establishing communications between a control station and one or more of a plurality of mobile terminals over a wireless link, comprising generating a plurality of carriers forming channels (**Fig. 2, plurality of codecs 16 process the digital information received from PBX 15 via switch matrix 25**); dynamically assigning one or more data carriers to a destination terminal (**Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; see also col. 9, lines 54-55**); modulating one or more carriers with packet data for said destination terminal (**base station provides modulation control, col. 8, line 47-49**) generating a control carrier containing control information pertaining to said modulated carriers (**Fig. 2, remote-connection processor (RPU) 20 conveys control and data messages to the CCU 18; see also col. 10, lines 18-20**); transmitting said data carriers and said control carrier as an aggregate signal to said destination terminal (**col. 9, lines 13-14, at least one of the time division time slots is required for the radio control channel, and, after being passed through the modem 21, is sent to**

Art Unit: 2664

the RF/IF processing unit (RFU) 21, where the IF signal from the modem is converted to an RF signal); characterized in that said received aggregate signal is stored in a buffer at said destination terminal (**Fig. 25, FIFO 140**); said control information is continually extracted from said aggregate signal stored in said buffer; and data is extracted from said buffered signal in response to said control information received on said control channel identifying said packet data as destined for said terminal (**Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46**).

10. With regard to claims 17 and 19, Panech et al. discloses a mobile terminal comprising a receiver for receiving an incoming signal (**Fig. 3, antenna 32b, RX RFU 31b, and RX modem 30b**) and an analog-to-digital converter for digitizing said received signal (**Fig. 25, A/D 139; see also col. 64, lines 41-47**) characterized in that a buffer stores the digitized received signal (**Fig. 25, FIFO 140**) and a processor (**Fig. 3, CCU 29**) continually monitors the stored signal to extract control information from the control channel and extracts packet data destined for the terminal from one or more of the data channels in response to control information received on the control channel identifying the packet data as destined for the terminal (**Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46**).

11. With regard to claims 2, 11 and 12, Panech et al. discloses that the carriers are transmitted as framed baseband signals (raw baseband data) wherein the frames contain one or more data channels and the control channel (**col. 14, lines 52-60**).

12. With regard to claims 5, 14, and 18, Panech et al. discloses that the terminal comprises a demodulator for demodulating the received signal to a baseband signal prior to ADC conversion (**col. 65, line 63 to col. 66, line 3**).

13. With regard to claim 6, Panech et al. discloses that the demodulation performed is quadrature (**col. 64, lines 48-52**).

14. With regard to claims 8 and 21, Panech et al. discloses that discloses that the means for assigning the data packets includes a means to dynamically assign the data to one or more channels (**Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; see also col. 9, lines 54-55**).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Panech et al. in view of Nagano

16. Claims 7, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Panech et al. as applied to claims 1-6, 8, 10-14, 17-19, and 21 above, further in view of Nagano (USP 5,808,463).

17. With regard to claims 7, 16, and 20, Panech et al. does not explicitly disclose that the DSP first decimates then demodulates the control channel. The function of a decimation filter is to remove out-of-band signals and noise. However, Nagano discloses a DSP (**Fig. 3, DSP 4**), which has a decimation filter (**Fig. 4**). It is well known that decimation filtering can be integrated into the functioning of a DSP. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Panech et al. to integrate a decimation filter, prior to demodulation, because such a modification is well known in the art.

Art Unit: 2664

Panech et al. in view of Stuart

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Panech et al. as applied to claims 1-6, 8, 10-14, 17-19, and 21 above, and further in view of Stuart (USP 5,666,648).

19. With regard to claim 9, Panech et al. discloses the use of assigned TDMA (**col. 4, lines 53-56**) and assigned TDM (**col. 7, lines 61-65**). However, Panech et al. does not specifically disclose the use of a random access or dedicated channels. However, Stuart discloses the use of random access (**col. 15, lines 5-6**) and dedicated channels (**col. 34, lines 46-51**). It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the system of Panech et al. with the additional features of Stuart because Stuart discloses the use of random access and FDM for lower power output bursts from the transceivers relative to a wideband TDM system and hence, power savings—a well-known planning feature. Furthermore, Stuart also discloses that a dedicated channel architecture allows a continuous mode of operation (**col. 34, lines 46-51**), which would allow the use of longer bursts, and, therefore, more data could be transferred per session.

Panech et al.

20. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Panech et al. as applied to claims 1-6, 8, 10-14, 17-19, and 21 above.

Art Unit: 2664

21. With regard to claim 15, Panech et al. does not specifically disclose that the control carrier is substantially in the center of the received band. Applicants have not disclosed that placing the control carrier in the middle of the frequency band solves any stated problem or is for any particular purpose other than ease of use. It appears that the performance of the control carrier would result equally well with the control carrier being placed similarly as the control carrier disclosed in Panech et al. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Panech et al. to use the centered placement of the control carrier because such a modification is considered a mere design choice consideration, which fails to patentably distinguish over the prior art of Panech et al. In addition, changing the placement of the control carrier within the received band is interpreted as an optimum value for a known process. A discovery of an optimum value for a known process is obvious engineering. See In re Aller, 105 USPQ 233 (CCPA 1955).

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Rosati (USP 6,041,233) Method and system for providing global variable data rate connectivity in a satellite-based communications network. This reference discloses many of the claimed features recited in independent claims 1, 10, and 17. Specifically, Rosati discloses an SCPC system wherein the transmissions comprise a data channel(s) and a control channel, wherein the control channel data is un-associated with the payload data.

Art Unit: 2664

(b) Sakoda et al. (USP 6,532,223) Communication method, transmission method, reception method, base station and terminal.

(c) Campanella (USP 5,864,546) System for formatting broadcast data for satellite transmission and radio reception.

(d) Kaul (USP 4,586,177) Integrated narrowband and wideband TDMA networks.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A Mais whose telephone number is (703) 305-6959.

The examiner can normally be reached on 8:00-4:30.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-6182.

25. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

November 30, 2003



WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600